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Novae notiones generis *Paullinia*.

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The following novelties in the sapindaceous genus *Paullinia* were collected during recent explorations in the upper reaches of the Apaporis River drainage in eastern Colombia.

Paullinia emetica R. E. Schultes, spec. nov.

Frutex scandens et extensus. Rami robusti, basi usque ad 10 cm. in diametro, nigro cum cortice. Ramuli graciles, obtuse angulari fibroso-striatique, fusco-virides, minute pulverulento-puberuli, internodiis longis, pampinis gracilibus circinalibusque. Folia plerumque quinquepinnata, usque ad 25 (plerumque plus minusve 15) cm. longa, 10-18 cm. lata. Rhachides obscure alatae, firmae, leviter fibroso-striatae, 3-7 cm. longae, 1 mm. in diametro, quattuor-sulcatae. Foliola membranacea, brevi petiolulata (petiolulus 1 mm. longus) vel subsessilia, elliptica, apice acuminata, margine remotissime et grossiuscule dentata, 10-15 cm. longa, 4-5 cm. lata, utrinque glabra, vivo utrinque viridia pallida, lateralibus cum nervis septem ad novem, supra impressis, subtus elevatis, nervo praecipuo subtus cum pilorum vestigiis. Thyrsi solitarii, minute et sparsissime pulverulento-puberuli, cum rhachide usque ad 20 cm. longo. Inflorescentia axillaris, racemiformis, multi- (usque ad 50) flora, stricto-erecta, valde laxa.

Pedicelli plus minusve 5 mm. longi, minute pulverulenti, parvis cum bracteis triangulari-linguiformibus, acutis, hirtello-pilosis, 1.5 mm. longis. Flores parvi sed satis robusti, fragrantes, albi. Sepala quinque, inaequalia, membranacea; duo exteriora parva, ovata, 2 mm. longa 1 mm. lata, pilosiuscula; cetera petaloidea, ovato-oblonga, 4 mm. longa, 2.5 mm. lata, margine integra, minute pilosiuscula. Petala quattuor, alba, membranacea, oblonga (saepe irregularia et apice subacuta) margine integra, basi unguiculata, glabra vel extus subgranuloidea, 3 mm. longa, 1.5 mm. lata; squamis petalorum inferiorum magnis, cucullatis. Filamenta robusta, complanata, vulgo glabra sed saepe basi barbata, 2 mm. longa. Ovarium parvum, glabrum, ovoideum, 0.5 mm. diametro. Stylus carnosus, trifidus, brevissimus, 0.3 mm. longus.

COLOMBIA: Vaupés - Upper Apaporis Basin, Río Macaya, a few kilometers below the Cachivera del Diablo, alt. 350 meters. "Vine on riverside vegetation. Flowers white, fragrant. Used by Carijonas (former inhabitants) as emetic: an infusión of the leaves". May 1943, *R. E. Schultes 5422*. (TYPE in Econ. Herb. Oakes Ames; DUPLICATE TYPE in Herb. Nac. Col.) ; - Vaupés - Upper Apaporis Basin, Río Macaya near the Cachivera del Diablo, alt. 350 meters. "Vine growing on riverside vegetation. Fruits bright red when ripe". May 22, 1943. *R. E. Schultes 5511.*

The following description of the fruits of *Paullinia emetica* is based upon the collection *Schultes 5511*.

Fructus capsularis, pyriformis, trivalvis, alatus, in maturitate atrosanguineus, basi longe in pedunculum attenuatus, erostratus, usque ad 18 mm. longus, 8-10 mm. latus, epicarpio fibroso-coriaceus; extus glabrus, intus densissime albo-pubescenti. Semina quasi medio pro parte arillata, ovoidea, 4 mm. longa, 2 mm. in diametro.

Paullinia emetica appears to be most nearly related to *P. caloptera* Radlk. of western Brazil. It can be distinguished chiefly by the texture of its leaves (which are more thinly membranaceous) and the structure of its inflorescence (which is extremely lax and erect). There are also floral characters, especially in the structure of the petal appendages and style, which serve to separate the two species.

The Carijona Indians of Miraflores (on the Vaupés River), who formerly inhabited the Upper Apaporis Basin, employed an infusion of the leaves of *Paullinia emetica* as a strong emetic.

Paullinia splendida R. E. Schultes, spec. nov.

Frutex scandens et extensus. Rami robusti, usque ad 20 cm. diametro, nigro cum cortice scrobiculato. Ramuli graciles, sed satis robusti, subteretes, obscurissime angulato-striati, ferruginei, densissime villosi-pilosi, internodiis longis, pampinis gracilibus circinalibusque. Folia quinquepinnata, usque ad 35 (plerumque inter 20 - 25) cm. longa, plus minusve 20 cm. lata. Rhachides robustae, exalatae, usque ad 8 cm. longae. Foliola firme papyracea, brevi petiolulata (petioluli robusti, 2 - 4 mm. longi), elliptica, apice acuminata, basi rotundata, margine subintegra sed saepe prope apicem pseudodenticulata cum prolongatorum venorum secundorum spinulis obscure praedita, in statu adulta 14 - 20 cm. longa, 6 - 10 cm. lata, lateralibus cum venis 10 - 13, supra vix impressis, infra prominenter elevatis; supra nitida, atroviridiaque, nervis minute ferrugineo-villosis; infra dense atque molliter subferrugineo-pilosiuscula. Inflorescentiae axillares et terminales, multiflorae, congestissimae, stricto-erectae, 8 - 14 cm. longae (cum pedunculo), axibus robustis, dense ferrugineo-villosis. Floris bracteae late triangulari-ovatae, apice acutae, densissime villosae, 2 mm. longae, 2 mm. latae. Pedicelli comparate parvi usque ad 2 mm. longi, villosiusculi. Flores albo-cinerei. Sepala quinque, inaequalia; duo exteriora firme papyracea, extus albo-villosiuscula, intus glabra, subovalia, apice rotundata, plus minusve 3 mm. longa, 3 mm. lata, margine minute villoso-ciliata; cetera membranacea, majora, petaloidea, valde imbricata, extus albo-villosiuscula, intus glabra, apice rotundata, ovata, margine villoso-ciliata, 4 mm. longa, 3 mm. lata. Petala quattuor, submembranacea, alba, irregulariter oblonga, apice rotundata, margine integra, utrinque glabra, basi non unguiculata, 3.5 mm. longa, 2.5 mm. lata; squamis petalorum magnis, cucullatis, margine densissime albo pilosis. Stamina octo, in floribus profunde inclusa. Filamenta robusta, valde complanata, densissime albo-pilosa, 2 mm. longa. Antherae glabrae, 0.7 mm. longae. Ovarium elongo-ovoideum, glabrum, parvum, crasso cum stylo glabro; stigma trifidum. Fructus capsulares, trivalves, exalati, vivo conspicue atrosanguinei; capsula globosa, in stipitem 4 mm. longum attenuata, brevi rostrata (styli reliquiis coronata), epicarpio subsicco, parum crasso, maxime densissime piloso, usque ad 12 - 14 mm. longa, 11 - 13 mm. in diametro. Semina globosa, nigra, pulcherrima, quasi omnino cum pulpa alba arillata.

COLOMBIA: Vaupés - Upper Apaporis Basin, Río Macaya, below the Cachivera del Diablo, alt. 350 meters. "Vine growing on riverside vegetation. Fruit very hairy and a bright scarlet colour". July 1943. *R. E. Schultes 5677*. (TYPE in Econ. herb. Oakes Ames; DUPLICATE TYPE in Herb. Nac. Col.).

Paullinia splendida belongs to the section *Pleurotoechus* Radlk. It is distinct because of its very conspicuous scarlet and denselly hairy capsules. There are also a number of important peculiarities in floral structure distinguishing this species from others of the section.

Paullinia splendida forma **chrysocarpa.** R. E. Schultes, forma nova.

Ab *Paullinia splendida* differt fructu maxime densissime villoso atque pilis colore conspicue aureo-flavo.

COLOMBIA: Vaupés - Upper Apaporis Basin, Río Apaporis near the confluence of Ríos Ajajú and Macaya, near Puerto Hevea, alt. 350 meters. "Vine growing on riverside vegetation. Fruits globose, conspicuously light gold in colour and densely hairy". July 23, 1943. *R. E. Schultes 5643* (TYPE in Econ. Herb. Oakes Ames; DUPLICATE TYPE in Herb. Nac. Col.).

During my exploration in the Upper Apaporis Basin from April through July it was possible to establish the fact that there are two distinct fruit colours in *Paullinia splendida*. The most common is the scarlet fruit of the species, but the bright yellow-golden fruits of the forma are not infrequent. The one does not change into other with ripening. For this reason, I am inclined to believe that the status of *forma* is the most appropriate disposition for the gold-fruited variation.

Paullinia vaupesana Killip et Cuatrecasas var. **macayana** R. E. Schultes, var. nov.

Fructus capsularis, alatus, elongato-ovoideus, vulgo 11 mm. longus, 6 mm. in diametro, extus atrosanguineus atque densissime et minute pulverulentus; alis 1.5 - 2 mm. latis.

COLOMBIA: Vaupés - Upper Apaporis Basin, Río Macaya, Caño Comején, alt. 350 meters. "Vine growing on riverside vegetation in extensive swamp or *rebalse* area. Fruits blood-red, splitting to expose a black seed with a white, pulpy aril. Leaves coriaceous, glossy above, velvety beneath." May 14, 1943. *R. E. Schultes 5430*. (TYPE in Econ. Herb. Oakes Ames; DUPLICATE TYPE in Herb. Nac. Col.).

Vegetatively, this new variety is hardly distinguishable from *Paullinia vaupesana*. The only difference easily noted is the heavier or denser pulverulence on the under surface of the leaves of the variety.

There is, however, a remarkable difference in the fruits. The capsule of *Paullinia vaupesana* is conspicuously pyriform in shape with a long and gradually attenuate basal peduncle, whereas in *P. vaupesana* var. *macayana*, the fruit is elongate-ovoid, supported on an abrupty constricted peduncle. In the variety, the wings of the fruit are smaller and the pulverulence of the epicarp is noticeably denser.